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## ChemistryNews article trends in 2009–2020 : The current state, and future

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# CHEMISTRYNEWS

## ARTICLE TRENDS IN 2009–2020: THE PAST, CURRENT STATE, AND FUTURE

As the editor-in-chief, it is my responsibility to understand the overall state of ChemistryNews. In this article, I will analyse the development of ChemistryNews through a trend analysis based on descriptive statistics. The objective is to gain metalevel knowledge of the magazine and to share some insights of the editorial work performed behind the scenes.

### Overall article trend

ChemistryNews is a trilingual magazine including articles written in Finnish, Swedish, and English. During 2009–2020, altogether 541 articles have been published in the

magazine. The number of Finnish and English articles are notable, but the proportion of articles in Swedish is minimal (see Figure 1). However, despite not incorporating many Swedish articles, it is important to emphasize Finland's bilingual cultural background.

The number of articles experiences great yearly variation. The first two years were active, and in 2015–2016 the number of articles also reached over 50. Currently, the number of annual articles has decreased and has stabilized to about thirty (see Figure 1). I will discuss the reasons for this change in later sections.

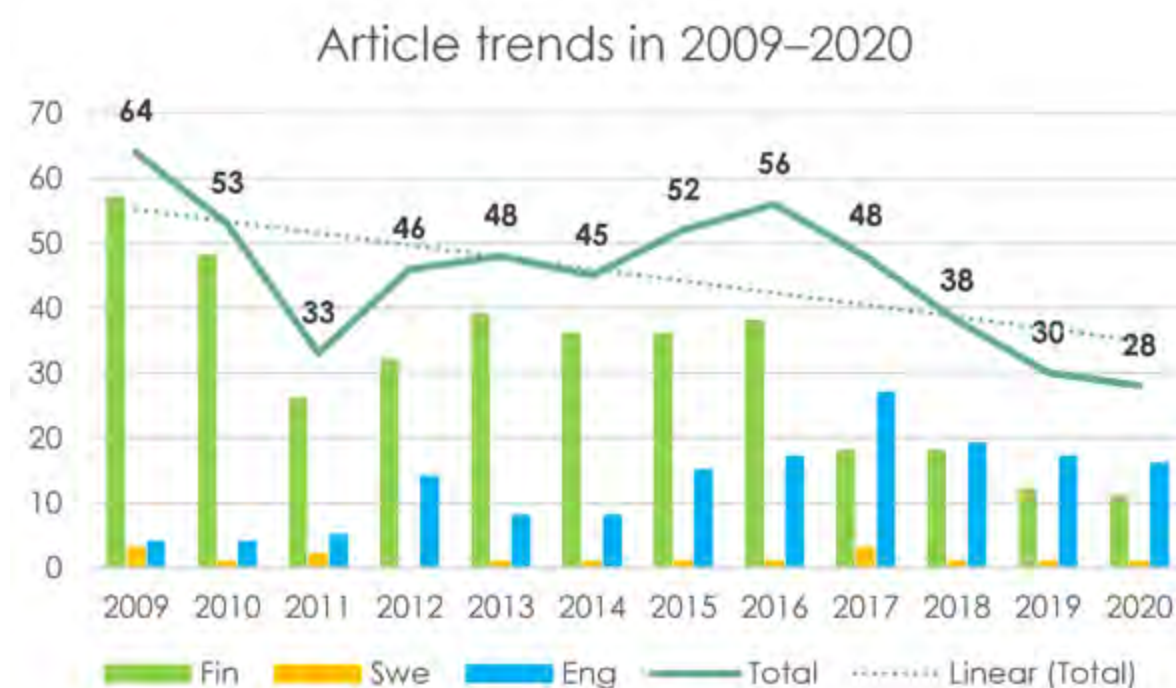


Figure 1. Annual articles written in Finnish, Swedish, and English, and the overall trend.

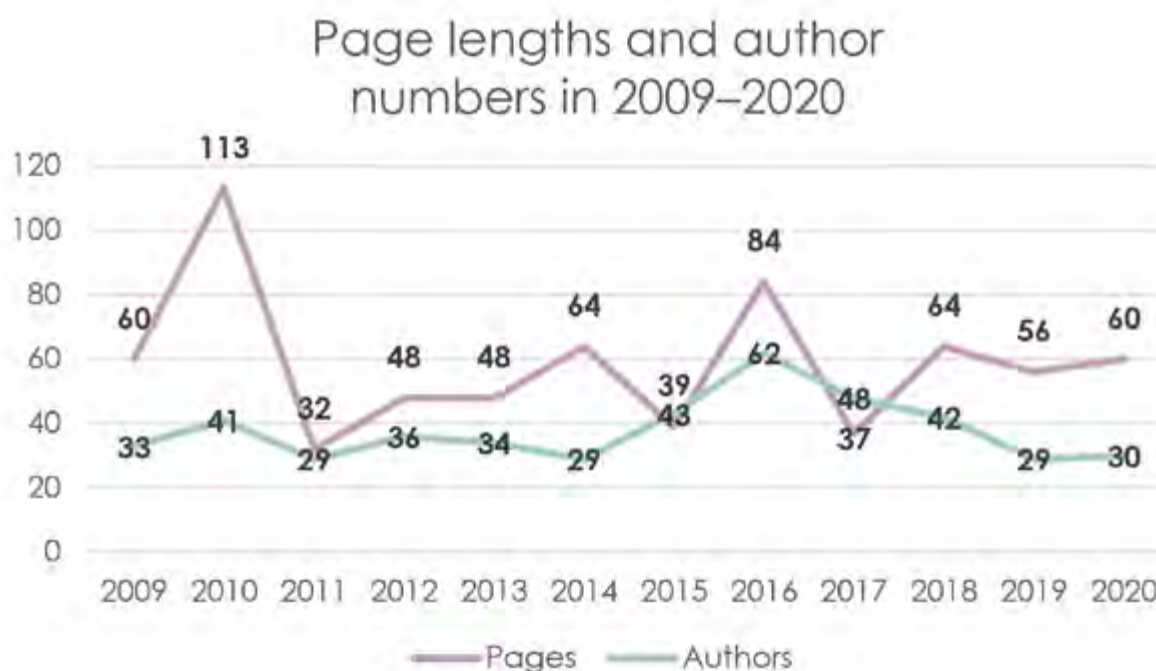


Figure 2. Volume page lengths and the number of authors in 2009–2020.

However, it is interesting that despite article (see Figure 1) and author numbers decreasing, the page lengths per volume have not (see Figure 2). This is explained by the authors producing longer texts although the number of authors is decreasing. This enables ChemistryNews to offer interesting content despite the change.

#### Effect of editorial processes

Certain changes over time may be explained by examining the editorial processes used per issue and categorizing them into different ratio profiles (see Figure 3):

- Page/Article ratio indicates the medium length of an article
- Page/Author ratio indicates the medium input of an author
- Article/Author ratio indicates the medium number of article contributions per author.

Firstly, 13 years of publishing history is a long period. During this long time, changes in the editorial team are inevitable. They are also necessary for developing the magazine – new people bring change.

From the editorial perspective, the history of ChemistryNews' includes four major periods:

**1. 2009–2011:** Maija Aksela founded the magazine in 2009. She acted as the editor-in-chief for the first years, and the editorial process included an active editorial

board. The first three years experienced the most variation, as an optimal form for the process was sought. In 2009, articles were short, but the number of articles was high. In 2010, authors wrote longer articles and article length doubled. 2011 was the last year for this set-up, and it was then that ChemistryNews found an equilibrium state that was passed on to the next main editor.

**2. 2012–2016:** Professor Kristiina Wähälä was the next editor-in-chief. Kristiina directed ChemistryNews for an impressive 5-year period. During this time, articles were written by both individual authors and an active editorial board. The volume ratio profile indicates quite similar yearly activities. However, a few changes occurred. In 2014, individual authors wrote slightly longer articles, after which the number of authors began to increase. The number peaked in 2016, when everything was accomplished with higher intensity, possibly because this was Kristiina's final year as editor-in-chief. For example, the number of articles reached an impressive 56 and the page length 84 pages. In addition, the number of authors was 62, which is the largest number of authors throughout the history of ChemistryNews (see Figure 2 and compare with the 2016 ratio profile in Figure 3). From the community engagement viewpoint, 2016 has been the most successful year for ChemistryNews.

**3. 2017–2018:** In 2017, two new editors-in-chief – Susanne Wiedmer and Maiju Tuomisto started with ChemistryNews. Another big change according to the

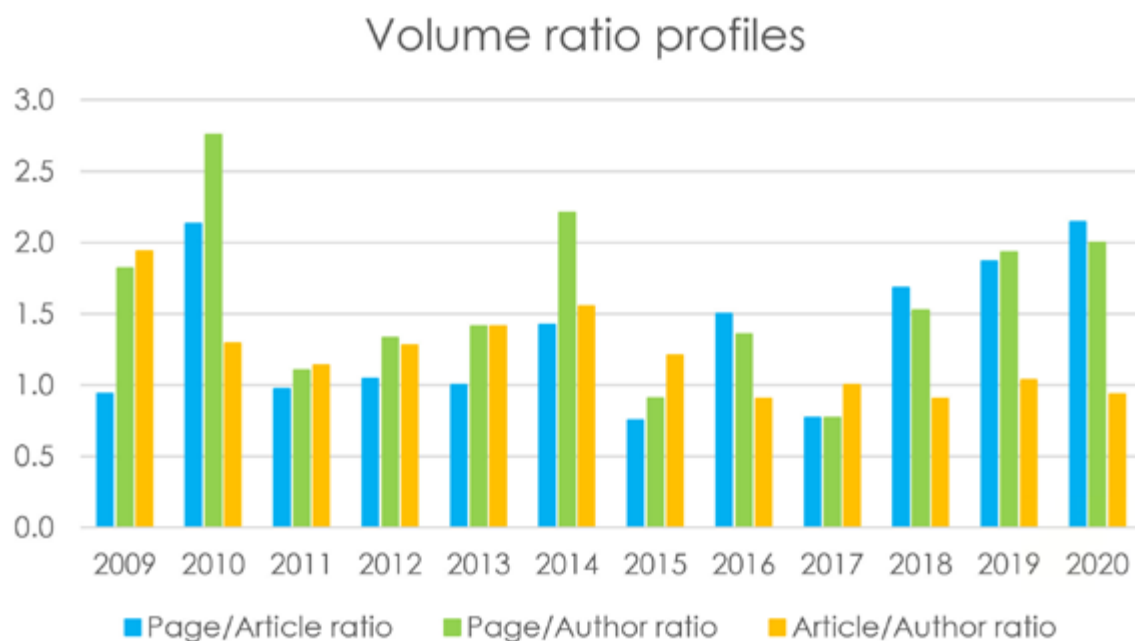


Figure 3. The volume author profiles represent the yearly article structure and editorial processes.

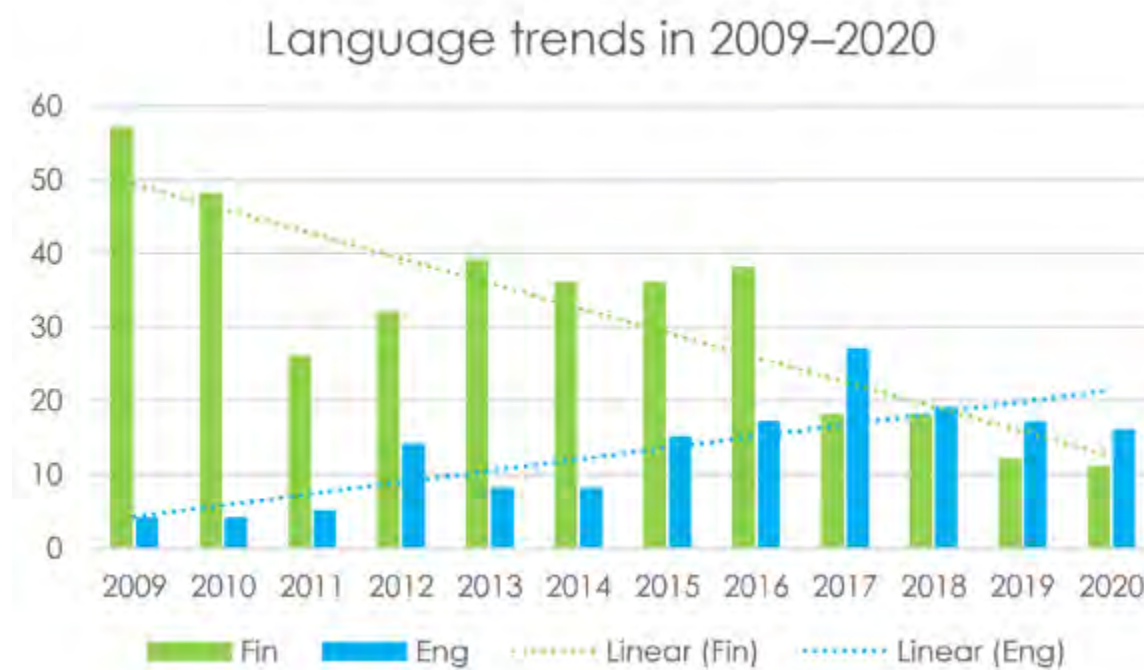


Figure 4. The number of English and Finnish papers and their trends.

title page of the 2017 issue was that the editorial board was no longer used. This means that researchers and teachers began writing the articles, which changed the volume ratio profile (see the 2017 profile from the Figure 3).

**4. 2019–2020:** The main editors changed again in 2019. In 2019, I coordinated the editorial process together with William Bower. In 2020, Will moved back to the UK, and I took over the chief editor's responsibilities. The current ratio profile is similar to the 2018 profile, which means that I have adopted editorial processes from previous editors. The current model relies on content written by teachers and researchers. Therefore, ChemistryNews represents the communication needs of projects and research groups. There is no editorial team writing the articles.

#### Internationalism is the future direction

According to the article language trend, internationalization is the future of the Chemistry Department. The annual number of articles written in English is increasing compared to Finnish. As of 2017, the number of articles in English exceeded the number of Finnish articles (see Figure 4). The ChemistryNews 2019 Openings reveals one reason for this change:

*"During the last two years, several new professors have been recruited and, for the first time in the history of the Department, three of these have moved to Helsinki from abroad."* (Heikki Tenhu, 2019)

However, the balance between Finnish and English articles also depends on the issue theme. The theme for this year's issue is the Unit of Chemistry Teacher Education, and all the themed articles are in Finnish. Therefore, this year's issue contains many more Finnish articles than usual.

#### Conclusions

This kind of analysis enables explaining changes via trends, which is not possible when looking solely at individual articles. This is important knowledge for an editor-in-chief. The next step would be to deepen the analysis by calculating the number of research articles, teaching articles etc. The category-based approach would provide an activity fingerprint and reveal what topics the Department of Chemistry as a community has considered important for communicating to society over time.

Another important future decision is the structure of the editorial team. As discussed earlier, there is no editorial team currently. This model has both strengths and challenges. For example, author-driven content production engages more people in writing than a process based on an editorial team. ChemistryNews is open for anyone with a need to reach over 2 000 readers across society. The challenge is that people submitting articles is not guaranteed. Therefore, the length of an issue may experience dramatic yearly changes. ●

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